AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A ~~lasing~~ tunable ring laser device comprising:

a ring ~~cavity~~ laser comprising a ring resonator element and an optical gain element that forms part or all of the ring resonator element, the ring resonator element and optical gain element being operable in combination to generate a laser emission at a range of frequencies decided by a resonant frequency of the ring resonator element;

a coupling ~~means~~ element for extracting laser emission from the ring ~~cavity~~ laser; and

a frequency selection element ~~means in connection with the coupling means, wherein the frequency selection means is~~ located outside the ring resonator element, and not forming part of the ring resonator element, the frequency selection element being connected to the ring resonator element by way of the said coupling element, and being operable to ~~feed back~~ reflect a part of the extracted laser emission into the ring ~~cavity~~ resonator element, and to select the frequency of ~~the feedback signal, and the frequency selection means is not part of the ring cavity~~ said part of the extracted laser emission;

said frequency selection element incorporating a mechanism for changing the frequency of the reflected light.

2. (Currently Amended) The ~~lasing~~ tunable ring laser device as claimed in claim 1, wherein the frequency selection ~~means~~ element is a grating.

3. (Currently Amended) ~~A lasing deice~~ The tunable ring laser device as claimed in claim [[1]] 2, wherein the ring ~~cavity~~ resonator element is an enclosed ~~comprises a ring-shaped optical~~ waveguide path.

4. (Currently Amended) ~~A lasing~~ The tunable ring laser device as claimed in claim 3, wherein the coupling ~~means~~ element comprises a waveguide ~~output~~ coupler.

5. (Cancelled)

6. (Currently Amended) ~~A lasing~~ The tunable ring laser device as claimed in claim [[5]] 4, wherein the optical gain element is a semiconductor material.

7. (Currently Amended) The ~~lasing~~ tunable ring laser device as claimed in claim 6, wherein the waveguide ~~output~~ coupler is a bi-directional coupler.

8. (Currently Amended) The tunable ring laser ~~lasing~~ device as claimed in claim 7, wherein the frequency selection ~~means~~ element and the optical gain element ~~are comprised of~~ comprise an optically passive layer and an optically active layer, a semi-insulating layer, an upper cladding layer and an ohmic contact layer; and

the frequency selection ~~means~~ element further comprising corrugations formed by an etching process.

9. (Currently Amended) The ~~lasing~~ tunable ring laser device as claimed in claim 7, wherein the optical gain element, the grating, the waveguide ~~output~~ coupler and the ring resonator element ~~cavity~~ are monolithically integrated onto a substrate.

10. (Currently Amended) The ~~lasing~~ tunable ring laser device as claimed in claim 9, wherein the optical gain element ~~is comprised of~~ comprises an optically passive layer and an optically active layer separated by a spacer layer;

the grating ~~is comprised of~~ comprises a waveguide made from an optically passive layer and an optically active layer; and

the ~~output~~ waveguide coupler and the ring resonator element ~~cavity~~ are formed in an optically passive layer.

11. (Currently Amended) The tunable ring laser ~~lasing~~ device as claimed in claim 10, wherein the grating is formed by periodically varying the width of the waveguide.

12. (Currently Amended) The tunable ring laser ~~lasing~~ device as claimed in claim 10, wherein the grating is formed by etching corrugations in the waveguide.

13. (Currently Amended) The tunable ring laser ~~lasing~~ device as claimed in claim 7, wherein the optical gain element, the grating, the ~~output~~ waveguide coupler and the ring resonator element ~~cavity~~ are hybrid integrated onto a substrate.

14. (Currently Amended) The tunable ring laser ~~lasing~~ device as claimed in claim 13, wherein the substrate material is optically transparent to a lasing wavelength.

15. (Currently Amended) The tunable ring laser ~~lasing~~ device as claimed in claim 1, wherein the frequency selection element ~~means~~ comprises:

a control element ~~means~~ for controlling a refractive index of the frequency selection element ~~means~~.

16. (Currently Amended) The tunable ring laser ~~lasing~~ device as claimed in claim 15, wherein the control element ~~means~~ is a variable current source.

17. (Currently Amended) The tunable ring laser ~~lasing~~ device as claimed in claim 16, wherein lasing occurs where a resonant frequency of the ring resonator element ~~cavity~~ is substantially the same as the reflecting frequency of the frequency selection element ~~means~~.

18. (Currently Amended) An optical communication system including a tunable ring laser ~~lasing~~ device as claimed in claim 1.

19. (Currently Amended) A method of changing a lasing frequency of a ring-~~cavity~~ laser[[,]] that comprises a ring resonator element and an optical gain element that forms part or all of the ring resonator element, a coupling element for extracting laser emission from the ring laser, a frequency selection element located outside the ring resonator element, and not forming part of the ring resonator element, the frequency selection element being connected to the ring

resonator element by way of the said coupling element, said frequency selection element incorporating a mechanism for changing the frequency of the reflected light, the method comprising:

generating, through operation of the ring resonator element and the optical gain element that forms part or all of the ring resonator element, a laser emission at a range of frequencies decided by a resonant frequency of the ring resonator element;

reflecting, through operating the frequency selection element located outside the ring resonator element, and not forming part of the ring resonator element, a part of an extracted laser emission into the ring resonator element;

operating the ring ~~cavity~~ laser at a first ring ~~cavity~~ resonant frequency, wherein a reflecting frequency of the frequency selection element ~~means~~ substantially coincides with ~~the~~ a first ring ~~cavity~~ resonant frequency;

controlling the frequency selection element ~~means~~ to change the reflecting frequency from the first reflecting frequency to a second reflecting frequency; and thereby

operating the ring ~~cavity~~ laser at a second ring ~~cavity~~ resonant frequency, wherein the second reflecting frequency of the frequency selection element ~~means~~ substantially coincides with the second ring ~~cavity~~ resonant frequency.

20. Cancelled.

21. (Currently Amended) The method of changing a lasing frequency of a ring ~~cavity~~ laser as claimed in claim 19, wherein ~~the step of~~ controlling the frequency selection element ~~means~~ comprises controlling a refractive index of the frequency selection element ~~means~~.

22. (Currently Amended) The method of changing a lasing frequency of a ring ~~cavity~~ laser as claimed in claim 21, the method further comprising:

reducing a pumping level of an optical gain element to a level less than a lasing threshold for the duration of changing the frequency selecting element ~~means~~ from the first reflecting frequency to the second reflecting frequency; and

restoring the pumping level of the optical gain element to above the lasing threshold after the change from the first reflecting frequency to the second reflecting frequency.

23. (Currently Amended) The method of changing a lasing frequency of a ring ~~cavity~~ laser as claimed in claim 22, wherein the frequency selection element ~~means~~ is a grating.

24. (Currently Amended) The method of changing a lasing frequency of a ring ~~cavity~~ laser as claimed in claim 23, wherein the ring resonator element ~~cavity~~ comprises a ring-shaped optical waveguide.

25. (Currently Amended) The method of changing a lasing frequency of a ring ~~cavity~~ laser as claimed in claim 24, wherein the coupling element ~~means~~ comprises a waveguide ~~output~~ coupler.

26. Cancelled.

27. (Currently Amended) The method of changing a lasing frequency of a ring ~~cavity~~ laser as claimed in claim 25 [[26]], wherein the optical gain element is a semiconductor material.

28. (Currently Amended) The method of changing a lasing frequency of a ring ~~cavity~~ laser as claimed in claim 27, wherein the waveguide ~~output~~ coupler is a bi-directional coupler.

29. (New) A method of selecting the lasing frequency of a ring laser that comprises a ring resonator element and an optical gain element that forms part or all of the ring resonator element, a coupling element for extracting laser emission from the ring laser, a frequency selection element located outside the ring resonator element, and not forming part of the ring resonator element, the frequency selection element being connected to the ring resonator element by way of the said coupling element, said frequency selection element incorporating a mechanism for changing the frequency of the reflected light, the method comprising:

operating the optical gain element that forms part or all of the ring resonator element so that the ring laser emits a laser emission;

operating the frequency selection element located outside the ring resonator element and not forming part of the ring resonator element so that its reflection frequency essentially coincides with a resonant frequency of the ring resonator element.

30. (New) A method of selecting the lasing frequency of a ring laser that comprises a ring resonator element and an optical gain element that forms part or all of the ring resonator element, a coupling element for extracting laser emission from the ring laser, a frequency selection element located outside the ring resonator element, and not forming part of the ring

resonator element, the frequency selection element being connected to the ring resonator element by way of the said coupling element, said frequency selection element incorporating a mechanism for changing the frequency of the reflected light, the method comprising:

operating the optical gain element that forms part or all of the ring resonator element so that the ring laser emits a laser emission;

operating the reflection frequency selection element located outside the ring resonator element and not forming part of the ring resonator element so that its reflection frequency essentially coincides with a first resonant frequency of the ring resonator element, so that the tunable ring laser device emits essentially at the first resonant frequency of the ring resonator element;

changing the reflection frequency of the frequency selection element so that its reflection frequency essentially coincides with a second resonant frequency of the ring resonator element, so that the ring laser emits essentially at the second resonant frequency of the ring resonator element.

31. (New) A method of selecting the lasing frequency of a ring laser that comprises a ring resonator element and an optical gain element that forms part or all of the ring resonator element, a coupling element for extracting laser emission from the ring laser, a frequency selection element located outside the ring resonator element, and not forming part of the ring resonator element, the frequency selection element being connected to the ring resonator element by way of the said coupling element, said frequency selection element incorporating a mechanism for changing the frequency of the reflected light, the method comprising:

operating the optical gain element that forms part or all of the ring resonator element so that the ring laser emits a laser emission;

operating the reflection frequency selection element located outside the ring resonator element and not forming part of the ring resonator element so that its reflection frequency essentially coincides with a first resonant frequency of the ring resonator element, so that the tunable ring laser emits essentially at the first resonant frequency of the ring resonator element;

reducing the gain of the optical gain element to a level less than the lasing threshold of the ring resonator element for a duration of time, so that the ring laser essentially does not produce laser emission, and in this duration,

changing the reflection frequency of the frequency selection element so that its reflection frequency essentially coincides with a second resonant frequency of the ring resonator element, so that the ring laser emits essentially at the second resonant frequency of the ring resonator element;

restoring the gain of the optical gain element to above the lasing threshold of the ring resonator element; wherein

the ring laser emits essentially at the second resonant frequency of the ring resonator element.